# Aviation Medicine Orientation

# Introduction

- History of Aviation Medicine
- Evolution of flying machine, > 100yrs
- New challenges for aviator = mission of aviation medicine even more challenging

# Terminal Learning Objective

- Action: Develop the knowledge necessary to understand Aviation Medicine
- Condition: As an aviator and air crewmember
- Standard: AR 40-501, AR 600-105&106, AR 40-8, APLs, ATBs, and Flight Surgeon Reference Guide

# Enabling Learning Objective # 1

- Action: Identify the organizations that provide a valuable service to maintaining aviation medical standards.
- Condition: Given a list.
- Standard: AR 40-501, Safety Center and USAARL mission statements

# US Army Aeromedical Activity (AAMA)

- Review and recommends FDME and waiver disposition
- Maintains the Aviation Epidemiology Data Register (AEDR) to support research and clinical studies for aircrew medical standards and policy

# US Army Safety Center

- Accident investigations (ground and air)
- Conduct safety training
- Write safety policies for the Army

# US Army Aeromedical Research Laboratory

- Conduct research in the effects of exogenous aeromedical factors in the aviation environment
- Conduct research and development in aviation life support.

# US Army School of Aviation Medicine

- Conducts training on aeromedical subjects and trains health care providers
- Conducts Aviation Resource Management Surveys (ARMS)
- Sustain the Aviation and SOF with training in Altitude Chambers.

# Questions

# Enabling Learning Objective #2

- Action: Identify the Aviation Medicine Team
- Condition: Given a list
- Standard: IAW AR 40-501, AR 600 -105 & 106.

# Flight Surgeon

- Physician trained in aviation medicine
- Army Flight Surgeon Primary Course (AFSPC)
- Residency in Aerospace Medicine (RAM)
- Rated crewmember

# Aeromedical Physician Assistant (APA)

- Trained in aviation medicine
- Army Flight Surgeon Primary Course (AFSPC)
- Supervised by a Flight Surgeon
- Non-rated, non-crewmember

# Aeromedical Psychologist

- Trained in clinical psychology
- Aeromedical Clinical Psychology Course
- Work with the FS/APA
- Non-rated, non-crewmember

# Healthcare Team Duties and Responsibilities

- FS/APA
  - Clinical Medicine
  - Operational Preventive Medicine
  - Unit readiness
  - Staff Function
  - Clinical Support

# Healthcare Team Duties and Responsibilities

- FS/APA Cont.

# Questions

# Enabling Learning Objective #3

- Action: Determine the primary goal of the Aviation Medicine Program.
- Condition: Given a list
- Standard: AR 40-3

# Aviation Medicine Program

- Designed to promote and maintain the aviation fighting force through health promotion and sustainment of the mental and physical well-being of aviation personnel.

# Aviation Medicine Program

- Traditionally to deliver clinical and operational preventive medicine services.
- Primary goal is preventive medicine.

# Aviation Medicine Program

- Three Echelons of Preventive Medicine
  - Primary Echelon
  - Secondary Echelon
  - Tertiary Echelon

# Aviation Medicine Program

- Primary Echelon (Prevention/Pre-disease)
  - *Health Education Programs*
    - Health education topics
  - Environmental Education Programs
    - Inspections
    - Participation

# Aviation Medicine Program

- Secondary Echelon (Intervention/Latent Disease)

  - Flight Surgeon intervenes in the disease processes that affect aviation safety, and mission completion

  - Conducted during clinical or social setting, FDME, flight line visits

# Aviation Medicine Program

- Tertiary Echelon (Rehabilitation/ Referral)

  - Ensures appropriate coordination of medical and ancillary care in the rehabilitation of grounded air crew members.

  - Goal is to return aircrew members to duty as soon as possible

# Questions

# Enabling Learning Objective #4

- Action: Identify the standards for a Flying Duty Medical Examination (FDME) to include the Flying Duty Health Screen (FDHS) that is given to an aviator.
- Condition: Given a list.
- Standard: IAW AR 40-501, AR 600-105 & 106, ATB

# FDME

- Periodic Screening Medical Exam
- Starting point for all aircrew members
- Promotes and preserves the fitness, deployability, and safety of aviation personnel

# Two Categories of FDME

- Initial FDME:
  - Performed for accession purposes.
  - Valid for up to 18 months from date of examination.

# Two Categories of FDME

- Comprehensive FDME:
  - Retention type of FDME
  - Performed every 5 yrs (between 20-50 yrs old)
  - 5 yr period based on the year of the initial FDME or the date of the last comprehensive FDME
  - After 50 yrs old, then annually
  - Valid for 12 months, synchronized to the aircrew members birth month

# FDHS

- Interim health screening tool.
- Goal to ensure maintenance of aircrew health and fitness for aviation duty.
- Performed on trained aircrew.
- Valid 12 months and is synchronized with the aircrew member’s birth month.

# Classes of FDME:

Class IA/IW

Class III

Class II

Class IV

# Class IA/IW:

- Initial entrance physical examination for those that want to be pilots.
- Valid for up to 18 months from the date of examination.

# Class 2:

- Accession standard for FS, APA, and trained aviators.
- Must take examination within three month period preceding end of birth month.
  - i.e. Birthday 6 MAR 66, start FDME in January and should be complete by 31 MAR
- Will not be suspended due to FTX or mobilization.

# Class 3:

- Crewmembers, non-crewmembers, and other personnel required by competent authority to fly in Army aircraft (i.e. FM, AP, crew chief)
- Must take examination within a three month period preceding the end of the birth month.
  - i.e. Birthday 6 MAR 66, start FDME in January and should be complete by 31 MAR

# Class 4:

- Air traffic controllers, both military and civilian.
- Must take examination within a three month period preceding the end of the birth month.
  - i.e. Birthday 6 MAR 66, start FDME in January and should be complete by 31 MAR

# Parts of a FDME/FDHS

- Part 1: Compile all information/data that the FS/APA will need.
- Part 2: “Hands-On”.
- After part 2 is completed the FDME/FDHS is ready for aeromedical disposition

# Questions

# Enabling Learning Objective #5

- Action: Identify the components of the DA Form 4186.
- Condition: Given a list.
- Standard: IAW AR 40-501, AR 600-105 & 106, and FM 1-300.

# DA Form 4186

- Medical Recommendation for Flying Duty (“Upslip”)
- Notifies the commander of medical fitness for all classes of military and civilian aviation personnel.

# DA Form 4186-Section A

**SECTION A - QUALIFYING ACTION RECOMMENDED BY MEDICAL AUTHORITY**

**7. MEDICAL CLEARANCE IS RECOMMENDED FOR THE FOLLOWING REASON(S):** *(Check one or more)*

- a. ☐ TERMINATION OF TEMPORARY MEDICAL SUSPENSION
- b. ☐ MEDICAL EXAMINATION
- c. ☐ REPORTING TO NEW DUTY STATION
- d. ☐ AFTER AIRCRAFT MISHAP
- e. ☐ TERMINATION OF MEDICAL DISQUALIFICATION
- f. ☐ PENDING ISSUE OF WAIVER FOR MEDICAL DISQUALIFICATION
- g. ☐ ISSUE OF WAIVER FOR MEDICAL DISQUALIFICATION
- h. ☐ OTHER *(Explain under remarks)*

**8. REQUIRED TO WEAR GLASSES WHILE FLYING OR OTHER DUTIES REQUIRING CORRECTED VISUAL ACUITY. (CONTACT LENSES ARE PROHIBITED UNLESS SPECIFICALLY AUTHORIZED.)** ☐ YES ☐ NO

**9. EFFECTIVE DATE**

**10. DATE CLEARANCE EXPIRES**

# DA Form 4186 - Section

**SECTION B - DISQUALIFYING ACTION RECOMMENDED BY MEDICAL AUTHORITY**

**11. THE FOLLOWING ACTION IS RECOMMENDED:**

a. ☐ **TEMPORARY MEDICAL SUSPENSION**

b. ☐ **TEMPORARY MEDICAL SUSPENSION FOLLOWING A/C MISHAP**

c. ☐ **PERMANENT MEDICAL DISQUALIFICATION**

d. ☐ PERMANENT MEDICAL DISQUALIFICATION FOLLOWING A/C MISHAP

e. ☐ OTHER *(Explain under remarks)*

**12. ESTIMATED DURATION OF INCAPACITY TO FLY**

**13. EFFECTIVE DATE**

# DA Form 4186 – Remarks

14. REMARKS

FFD (Full Flying Duty)

Or

DNIF (Duty Not To Include Flying)

Will not include patient privacy information.

15. WHILE IN A DUTY NOT INVOLVING FLYING STATUS

SIMULATOR DUTIES ALLOWED ☐ YES ☐ NO

GROUND RUNUP DUTIES ALLOWED ☐ YES ☐ NO

16. DIAGNOSIS CODE

# DA Form4186 - Section C & D

SECTION C - CERTIFICATION BY AIRCREW MEMBER

20. I CERTIFY THAT I HAVE BEEN NOTIFIED OF THE RECOMMENDATION(S) ABOVE AND UNDERSTAND THAT I ☐ MAY OR ☐ MAY NOT PERFORM AVIATION DUTIES AS OF THIS DATE

21. SIGNATURE

22. DATE

SECTION D - ACTION TAKEN BY COMMANDER

23. THE MEDICAL RECOMMENDATION IS

☐ APPROVED ☐ DISAPPROVED

24. TYPED NAME AND TITLE OF COMMANDER

25. COMMANDER'S SIGNATURE

26. DATE

DA FORM 4186, JAN 85 Previous edition of this form is obsolete Copy 1 (Individual's Health Record)

*"The unit commander is the final approval aut*

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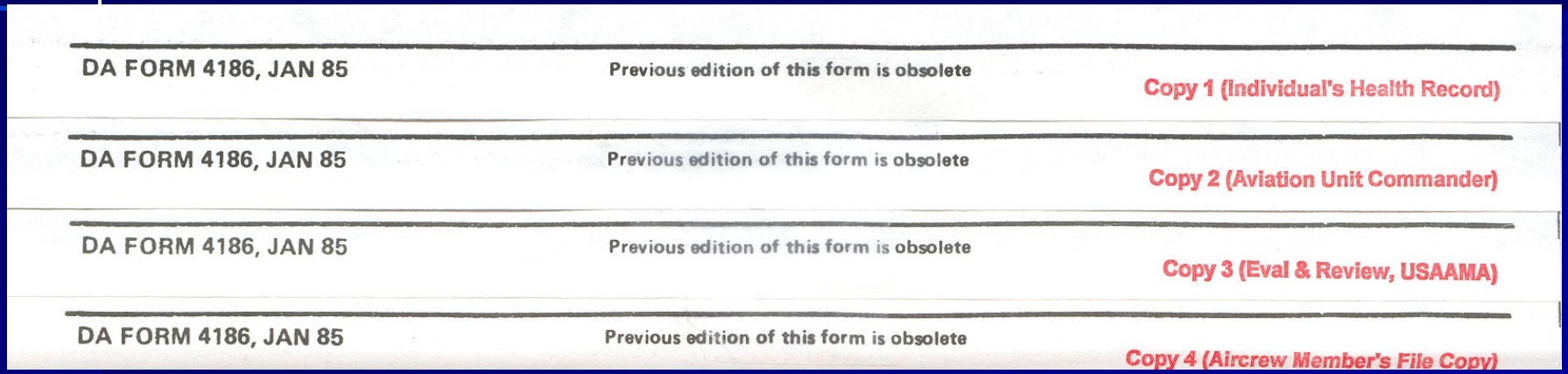
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- **Copy 3: AAMA**
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# Who is Required to Maintain a DA Form 4186?

- All military and civilian personnel
- Those who must maintain class 1-4 medical standards
- Aviators in an operational position
- Aviators in “simulator duty only” positions

# Questions

# Enabling Learning Objective #6

- Action: Determine the difference between a temporary and permanent aeromedical disqualification.
- Condition: Given a list.
- Standard: IAW AR 40-501 and Aeromedical Policy Letters.

# Temporary Disqualification

- Imposed by the FS/APA for temporary aeromedical disqualifying condition.
- Likely to result in re-qualification within 365 days.
- Condition resolves FS/APA recommends return to FFD.
- Examples: ankle sprain, acute rhinitis, gastroenteritis, and simple closed fracture.

# Permanent Disqualification

- Aeromedical condition not likely to result in re-qualification within 365 days.
- FS/APA submits recommended disposition to AAMA.
- Examples: Diabetes, heart attack, HIV positive, hypertension, seasonal allergic rhinitis, complicated pregnancy

# Aircrew Responsibility

- Report following to a FS/APA:
  - Symptoms indicate a change in health
  - Illness requiring the use of medication or visit to a healthcare provider
  - Drug or alcohol use
  - HIV positive

# Waiver Authority

- Class 1A/1W: Exception to policy. PERSCOM or NGB
- Class 2/4: PERSCOM or NGB
- Class 3: Local Aviation Commander, except alcohol/drug abuse or dependency, forward to AAMA and then to PERSCOM

# Waiver Criteria

- Must pass screening criteria:
  - Not suddenly disabling/incapacitating.
  - Not pose any potential risk for subtle incapacitation that might not be detected by the individual but would affect alertness, special senses, or information processing.
  - Must be resolved or stable at time of the waiver (i.e. non-progressing).

# Waiver Criteria

- Must pass screening criteria: (cont)
  - Must not be subject to aggravation by military service or continued flying duty.
  - Must not lead to significant loss of duty such as precludes unsatisfactory completion of training and/or military service.

# Waiver Criteria

- Must pass screening criteria: (cont)
  - Cannot require the use of uncommonly available tests, regular invasive procedures, or non-routine medication especially during deployment or assignment to austere areas.
  - If the possibility of progression or recurrence exists, the first signs or symptoms must be easily detectable and cannot constitute an undue hazard to the individual or to others.
  - It cannot jeopardize the successful completion of a mission.

# Questions:

# Enabling Learning Objective #7

- Action: Determine the timeframe an aircrew member must not fly after exogenous factor.
- Condition: Given a list.
- Standard: IAW AR 40-8.

# AR 40-8

- Temporary Restrictions Due to Exogenous Factors
- Applies to all personnel on flight duty status.
- Receiving any substance or procedure likely to provoke an adverse systemic reaction shall be restricted from flying until declared fit by FS/APA.

# Exogenous Factors

- Administration of Drugs:
  - Alcohol: 12 hours after last drink consumed and until no residual effect
  - Antihistamines or barbiturates: For period taken and for 24 hours after discontinued or after any sequelae, whichever is longer.

# Exogenous Factors

- Administration of Drugs: (cont)
  - Mood ameliorating, tranquilizing, or ataxic drugs: For period they are used and 4 weeks after medication is discontinued.

# Exogenous Factors

- Immunization: For minimum of 12 hours and for duration of any systemic side effects or local reaction.
- Blood Donations: Will not be regular blood donor. For minimum of 72 hours after donating 200cc or more.

# Exogenous Factors

- Decompression Experience: Such as altitude chamber regardless of altitude, restricted for 12 hours

# Exogenous Factors

- Diving: Will not fly or perform a chamber “run” within 24 hours following SCUBA diving or compressed air dives or high pressure runs.

# Exogenous Factors

- Tobacco Smoking: Refrain from smoking before night flight and during any flight.
  - Smoking Cessation Aids: (Class 2A)
    - Patches/Gum: DNIF x 72 hours
    - Zyban: DNIF for initial 2 weeks
- Strenuous Sporting Activities: DNIF should be considered after strenuous sporting activities.

# Questions:

# Enabling Learning Objective #8

- Action: Determine the herbal/dietary supplements that are allowed without prior approval of a FS/APA.
- Condition: Given a list.
- Standard: Aeromedical Policy Letters.

http://usasam.amedd.army.mil

# Medications:

- General self-medicating is prohibited by AR 40-8.
- Designated as class 1, 2A, 2B, 3, and 4.

# Class 1:

- Over-The-Counter (OTC) medications
- Occasional and infrequent use
- Used when the FS/APA are not available or with the knowledge of the FS/APA

# Class 2A:

- Require a prescription
- Short-term use
- Under supervision of a FS/APA

Pre-Deploy Rest Agents

# Class 2B: (Information Only, Chronic Use)

- Require prescription
- Short-term or chronic use
- Under supervision of a FS/APA
- Medical condition requires a waiver
- Must be noted on FDME
- First time use ground for 24 hours

# Class 3: Chronic Use Requiring Waiver

- Require prescription
- Requires a waiver for underlying medical condition

# Class 4: Mandatory Disqualifying Medications

- Grounds the aircrew member
- Not-waiverable

# Herbal/Dietary Supplements

- Some preparations are dangerous and can result in sudden incapacitation in flight.
- If taking one must be entered on the FDME/FDHS.
- Divided into three classes

# Herbal/Dietary Supplements: Class 1

- Used without approval of a FS/APA
- Must be stated on the FDME/FDHS

# Herbal/Dietary Supplements: Class 2

- Used with approval of a FS/APA
- Must be stated on the FDME/FDHS

# Herbal/Dietary Supplements: Class 3

- Not specifically listed are disqualifying
- Waivers, unlikely

# Herbal/Dietary Supplements: References

- In this rapidly evolving area, check with your medical librarian for current references.
- Available internet references on this topic:

  **http://usasam.amedd.army.mi**

  **http://www.brooks.af.mil/web/af/altmed/HOMEFRAME.htm**

  **http://www.usuhs.mil/mim/ergopam.pdf**

  **http://nccam.nih.gov** - National Center for Complementary and Alternative Medicine also at 1-888-644-6226

  **http://dietary-supplements.info.nih.gov**
- Office of Dietary Supplements, National Institutes of Health also at 1-301-435-2920
- **http://www/cfsan.fda.gov/~dms/supplmnt.html** - Food and Drug Administration

# Summary

- Aeromedical Organization
- Aeromedical Healthcare Team
- Aviation Medicine Program
- FDME/FDHS
- DA Form 4186
- Temp vs. Perm Disqualification
- Exogenous Factors/Medication
- Herbal/Dietary Supplements

Questions